Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Previously Presented) A method for determining the frequency response of an electrooptical component within a predefined frequency band comprising the steps of:

- generating optical pulses at a first carrier frequency and a predefined pulse frequency;

- driving an electrooptical component with a predefined electrical measurement signal, said predefined electrical measurement signal having a measurement frequency at an integral multiple of said predefined pulse frequency and including an additional predefined frequency offset;

- generating an electrooptical component output signal modulated at said measurement frequency, having a predefined second optical carrier frequency;

- frequency mixing said optical pulses and said electrooptical component output signal to form a plurality of mixed products

- detecting at least one mixed product having a modulation frequency which corresponds to said predefined frequency offset;

- determining the frequency behavior of said electrooptical component at said measurement frequency based on the intensity of the detected mixed product; and

- repeating the step of determining the frequency behavior of said electrooptical component at all measurement frequencies corresponding to $n(f_p)+\Delta f$ which lie within said predefined frequency band, where $n(f_p)$ is an integral multiple of said pulse frequency and Δf is said predefined frequency offset.

2. (Previously Presented) The method as claimed in claim 1, wherein the detecting step comprises detecting exclusively those mixed products (M") whose optical carrier frequency is a summation frequency formed from a first and second optical carrier frequencies.

3. (Previously Presented) The method as claimed in claim 1, wherein the detecting step comprises detecting exclusively those mixed products whose optical carrier frequency is a difference frequency formed from a first and second optical carrier frequencies.

4. (Previously Presented) The method as claimed in claim 1, characterized in that the predefined frequency offset (Δf) has a positive or a negative magnitude.

5. (Previously Presented) The method as claimed in claim 1, further comprising determining spectral line strengths of the optical pulses before the generating step and at least one of the determining steps further comprises taking the spectral line lengths into account.

6. (Previously Presented) The method as claimed in claim 5, wherein the taking into account step uses the spectral line strength whose spectral line frequency corresponds to a difference frequency between the measurement frequency (fmeas) and the predefined frequency offset (Δf).

7. (Previously Presented) The method as claimed in claim 1, further comprising determining spectral line strengths before the generating step by means of a spectral power of spectral lines of the optical pulses.

8. (Previously Presented) The method as claimed in claim 6, wherein at least one of the determining steps further comprises dividing a mixed product intensity value (Im*Dm) specifying an intensity of a selected mixed product (M") by a spectral line value (Im) - specifying the spectral line strength of the spectral line of the optical pulses which is associated with the selected mixed product (M") – and forming a frequency response value (Dm) of the electrooptical component (60).

9. (Previously Presented) The method as claimed in claim 1, further comprising forming optical mixed products (M) using a nonlinear element (40) through which the optical pulses and the optical output signal (Sout) are.

10. (Previously Presented) The method as claimed in claim 1, further comprising using a 2-photon detector for detecting the optical mixed products.

11. (Previously Presented) The method as claimed in claim 1, further comprising using an optical rectifier for forming the optical mixed products.

12. (Previously Presented) The method as claimed in claim 1, wherein the forming step comprises calculating the measurement frequency in accordance with:

$$fmeas = m * fp + \Delta f$$

where fmeas denotes the measurement frequency, Δf denotes the frequency offset and fp denotes the pulse frequency.

13. (Previously Presented) The method as claimed in claim 1, further comprising predefining the predefined frequency offset (Δf) in a variable fashion.

14. (Previously Presented) The method as claimed in claim 1, further comprising forming an electrooptical component (60) from a light source (61) and a downstream electrooptical modulator (62).

15. (Previously Presented) The method as claimed in claim 1, further comprising simultaneously determining a frequency response of an optoelectrical transducer (400) within a predefined frequency band by

- radiating the optical output signal (Sout) generated by the electrooptical component (60) into the optoelectrical transducer (400),
- measuring an electrical transducer signal (S2) generated by the optoelectrical transducer (400) with formation of a transducer measured value, and
- using the transducer measured value and the measured frequency response of the electrooptical component (60) to determine the frequency response of the optoelectrical transducer (400).

16. (Previously Presented) The method as claimed in claim 15, wherein the determining step further comprises dividing the transducer measured value by a frequency response value (Dm) of the electrooptical component (60).

17. (Previously Presented) The method as claimed in claim 1, wherein the generating step comprises generating by means of a first high-frequency source, and generating the measurement signal (Smeas) by means of a second high-frequency source, the two high-frequency sources (10, 70) being coupled.

18. (Previously Presented) The method as claimed in claim 1, further comprising measuring a phase response of the electrooptical component (60).

19. (Previously Presented) The method as claimed in claim 18, further comprising

- generating a phase signal (PL1) which specifies a phase angle ($\Delta\Phi1$) between a drive signal (SA) of a pulsed laser (20) configured to generate the optical pulses and the electrical measurement signal,

- measuring a phase angle between the generated phase signal (PL1) and a phase angle of the detected mixed product (M") for each of the measurement frequencies (fmeas) in each case with formation of a phase measured value ($\Delta\Phi2$).

20. (Previously Presented) The method as claimed in claim 18, further comprising measuring a phase response of an optoelectrical transducer (400).

21. (Currently Amended) An arrangement having a pulsed laser (20), an electrooptical component (60) and a measuring device (100) having an evaluation device (120), which is ~~suitable~~ <u>configured</u> for carrying out a method as claimed in claim 1.

22. (Previously Presented) The method as claimed in claim 1, wherein the intensity of the detected mixed product is at least one of an amplitude or root mean square value of power.

23. (Previously Presented) The method as claimed in claim 7, wherein the determining spectral line strengths step further comprises using an autocorrelator.

24. (Previously Presented) The method as claimed in claim 11, wherein the optical rectifier-is a nonlinear crystal.

25. (Previously Presented) The method as claimed in claim 17, wherein the two high-frequency sources are coupled in phase-locked fashion.